

I. GENERAL PROJECT DESCRIPTION  
MD 28 is assumed to run in a East and West direction. This project involves the modification of an existing traffic signal at the intersection of MD 28 (Jefferson Street) at Monroe Street in Montgomery County. New LED traffic signal heads and audible/tactile pushbutton stations shall be install at the intersection. New sidewalk ramp openings shall be installed following ADA standard guidelines for all four legs of the intersection. A new controller and cabinet along with an embedded meter service pedestal shall be installed to upgrade and replace the existing meter service pedestal and controller cabinet for this intersection. Video detection cameras shall be installed for the actuation of the left turns of MD 28 and the presence detection for all approaches of Monroe Street.

II. INTERSECTION OPERATION  
1. The intersection currently operate in a NEMA 6-phase. The mainline is MD 28 (Jefferson Street) and the side street is Monroe Street. Eastbound / Westbound Exclusive/Permissive LED left turn nearside signal heads shall be install for this approach of MD 28. For side Exclusive/Permissive signal heads exist today. The side streets operate with a three section Red/Yellow/Green ball that operates concurrently. Audible/Tactile pedestrian pushbutton stations shall be install for all crossings of the intersection, with the East and West legs being alternate pedestrian crossings.  
2. SHA signal shop shall install APS control unit into controller cabinet.

III. SPECIAL NOTES  
1. All pavement markings shall be installed in accordance with Administration standards.  
2. The contractor shall be responsible for terminating all signal cable to the appropriate terminals and properly label each cable.  
3. All traffic signal foundations shall be installed at the final sidewalk or curb grade for closed sections, highest roadway profile grade for open sections, to meet clearances as specified in the appropriate 800 series Standard Plates. The contractor shall verify ultimate grades prior to the installation of all signal equipment.  
4. All underground and overhead utilities shown on these plans are schematic only and may not be complete. The Contractor shall be responsible for notifying Miss Utility prior to construction so that all utilities may be located in the field. If the Contractor perceives that a conflict between the utilities and the traffic signal will occur, the Contractor shall notify the Project Engineer immediately so that the conflict may be resolved. Utility lines that are in conflict shall be relocated prior to any signal modification by others to resolve the conflict.  
5. The contractor shall preform the cabinet switch over during off peak hours or during the night when vehicle volumes at the intersection are minimal. Maintenance of Traffic during the construction sequence of the controller cabinet will be at the discretion of the contractor.  
6. Prior to the removal of the decorative skirts from the existing signal pole the contractor shall contact Mr. Tom Smith at (240)-751-2090 or Mr. Kevin Hogan at (240)-535-5015 72 hours in advance to schedule delivery of these items to the storage room. The address for the storage room is: 1101 Grand Champion Drive, Rockville, MD 20850

7. APS will function as follows:  
FOR JEFFERSON STREET  
a. When pedestrian locates and presses pushbutton for and extended time, the pushbutton unit will announce "Wait to cross Jefferson at Monroe."  
b. When Walk phase begins, the message will be a rapid tick which will last for the duration of the Walk phase.  
FOR MONROE STREET  
a. When pedestrian locates and presses pushbutton for an extended time, the pushbutton unit will announce "Wait to cross Monroe at Jefferson."  
b. When Walk phase begins, the message will be a rapid tick which will last for the duration of the Walk phase.

#### CONTACTS

<b>DISTRICT</b> MR. BRIAN YOUNG DISTRICT ENGINEER 301-513-7311	<b>OFFICE OF TRAFFIC AND SAFETY</b> MR. RICHARD DAFF SR. CHIEF, TRAFFIC OPERATIONS 410-787-7630
MS. ANYESHA MOOKHERJEE ASSISTANT DISTRICT ENGINEER - TRAFFIC 301-513-7318	MR. ED RODENHIZER CHIEF SIGNAL OPERATIONS 410-787-7650
VACANT ASSISTANT DISTRICT ENGINEER - UTILITIES 301-513-7350	MR. EUGENE BAILEY CHIEF SIGN OPERATIONS 410-787-7670
MR. KEVIN NOWAK & MR. DUANE BERNARD ASSISTANT DISTRICT ENGINEER - CONSTRUCTION 301-513-7336	MS. DARLENE EIDE CHIEF SUPPLY OFFICER IV (SIGNAL SHOP WAREHOUSE) 410-787-7668
MR. VERNON STINNETT ASSISTANT DISTRICT ENGINEER - MAINTENANCE 301-513-7304	MR. KAMAL HAMUD MCDPW&T DIVISION CHIEF 240-777-8761

#### EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY STATE HIGHWAY ADMINISTRATION		
ITEM NO.	QUANTITY	DESCRIPTION
9042	1 EA	CONTROLLER ASC II WITH TELEMETRY
9044	1 EA	CONTROLLER CABINET, SIZE 6
9086	1 EA	VIDEO DETECTION INTERFACE EQUIPMENT
9571	26 SF	SHEET ALUMINUM MAST ARM/POLE MOUNTED SIGN
	2 EA	M95-1 (78"x24") (MAST ARM MOUNTED)
B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR		
ITEM NO.	QUANTITY	DESCRIPTION
1001	2 EA	MAINTENANCE OF TRAFFIC
2002	5 CY	TEST PIT EXCAVATION
5001	1130 LF	REMOVAL OF EXISTING PERMANENT PAVEMENT LINE MARKINGS - ANY WIDTH
5005	550 LF	12 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
5006	135 LF	24 INCH HEAT APPLIED WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKINGS
6001	363 LF	STANDARD TYPE A COMBINATION CURB AND GUTTER 12 INCH GUTTER PAN 8 INCH DEPTH
6002	1100 SF	5 INCH CONCRETE SIDEWALK
8001	38 EA	12 INCH LED SIGNAL HEAD SECTION
8002	1 EA	2 WIRE CENTRAL CONTROL UNIT
8006	1 EA	ADJUST HANHOLE TO GRADE
8007	8 EA	AUDIBLE/TACTILE PEDESTRIAN PUSHBUTTON STATION & SIGNS
8008	5 EA	BREAKAWAY PEDESTAL POLE (ANY SIZE)
8010	8 EA	LED 16 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD
8013	1 EA	REM & DISPOSE MAT & EQUIP PER ASSIGN
8017	230 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - SLOTTED
8018	235 LF	SCHEDULE 80 RIGID PVC CONDUIT UP TO 4 INCHES - TRENCHED
8019	90 SF	DETECTABLE WARNING SURFACES
8022	3 EA	FURNISH AND INSTALL ELECTRICAL HANDHOLE
8023	900 LF	ELECTRICAL CABLE - 2 CONDUCTOR NO. 14 AWG
8025	950 LF	ELECTRICAL CABLE - 5 CONDUCTOR NO. 14 AWG
8026	1000 LF	ELECTRICAL CABLE - 7 CONDUCTOR NO. 14 AWG
8028	1 EA	INSTALL CONTROLLER CABINET - BASE MOUNT

#### EQUIPMENT LIST (CONT.)

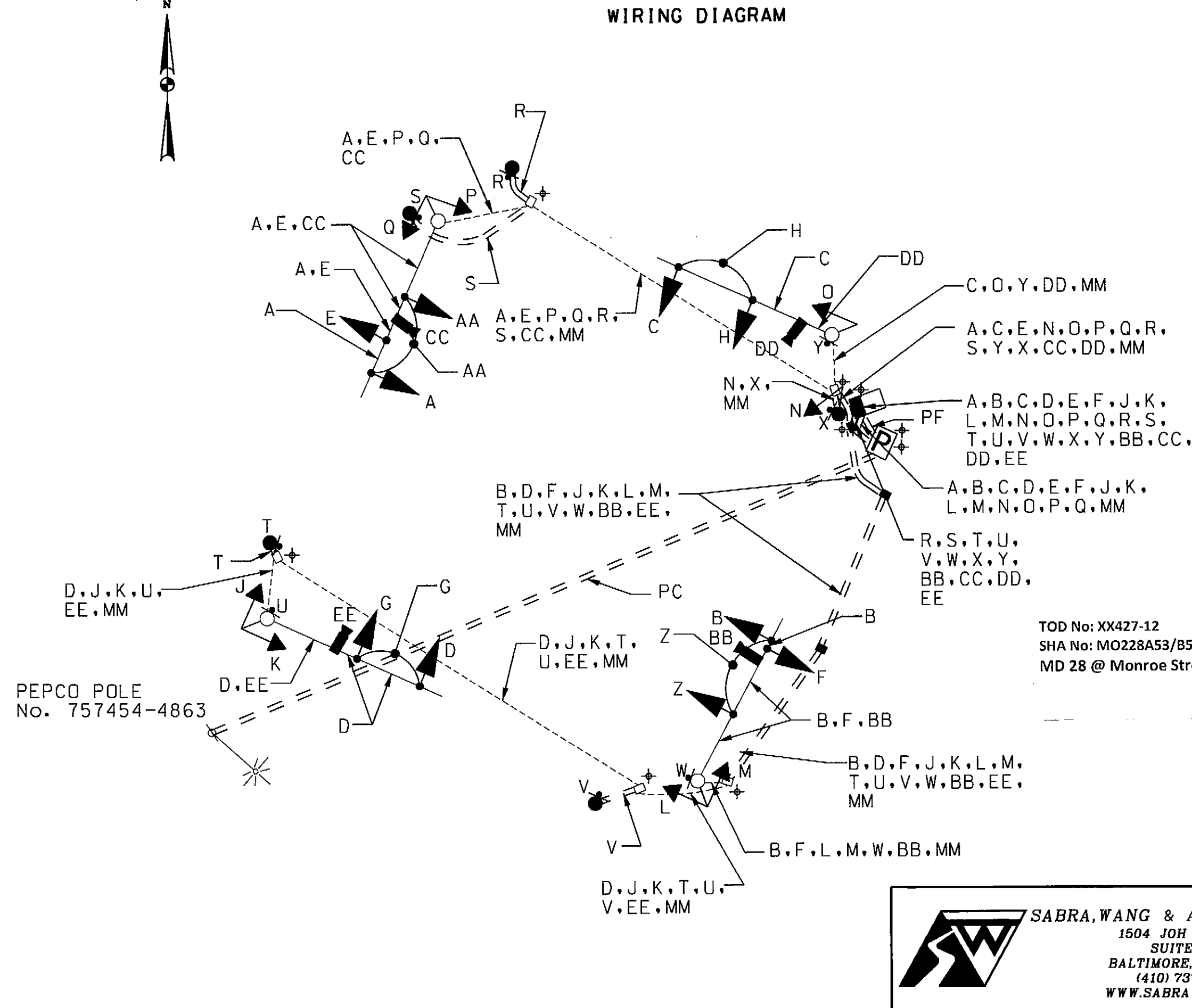
ITEM NO.	QUANTITY	DESCRIPTION
8032	4 EA	CUT, CLEAN, GALVANIZE AND CAP SIGNAL STRUCTURE
8033	305 LF	NO. 6 AWG STRANDED BARE COPPER GROUND WIRE
8034	26 SF	INSTALL OVERHEAD OR GROUND MOUNTED SIGN (INCLUDING ALL HARDWARE)
8037	1 EA	EMBEDDED METER SERVICE PEDESTAL
8038	440 LF	CABLE - 1 CONDUCTOR 250 KCMIL. CU. USE
8039	20 LF	ELECTRICAL CABLE 1 CONDUCTOR NO. 4 AWG THHN/THWN
8040	8 EA	PAINT SIGNAL STRUCTURE(FEDERAL GREEN)
8041	4 EA	VIDEO DETECTION CAMERA & CABLE UP TO 500 FT.

C. IF THE CABINET IS TO BE REMOVED SHA FORCES SHALL REMOVE THE CONTROLLER AND ALL AUXILIARY EQUIPMENT FROM THE CONTROLLER CABINET. THE CABINET AND ALL OTHER MATERIALS TO BE REMOVED BY THE CONTRACTOR SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

#### PHASE CHART

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	R	R	R	R	R	R	R	R	R	R								
	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								
	G	G	G	G	G	G	G	G	G	G								
PHASE 1 AND 5	←GR	←GR	R	←GR	←GR	R	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5 OR 2 AND 6																		
PHASE 1 AND 6	←GG	←GG	G	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
1 CHANGE	←YG	←YG	G	R	R	R	R	R	R	R	DW	WK	WK	DW	DW	DW	DW	DW
PHASE 2 AND 5	R	R	R	←GG	←GG	G	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
5 CHANGE	R	R	R	←YG	←YG	G	R	R	R	R	WK	DW	DW	WK	DW	DW	DW	DW
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	WK	WK	WK	WK	DW	DW	DW	DW
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	FLDW	FLDW	FLDW	FLDW	DW	DW	DW	DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	DW	DW	DW	DW	DW
4 AND 8 CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
PHASE 4 AND 8 ALT	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	WK	WK	WK	WK	WK
PED CLEARANCE	R	R	R	R	R	R	G	G	G	G	DW	DW	DW	FLDW	FLDW	FLDW	FLDW	FLDW
4 AND 8 ALT CHANGE	R	R	R	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	DW	DW	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	DARK	DARK	DARK	DARK	DARK	DARK	DARK	DARK

#### WIRING DIAGRAM



#### KEY

A  
B  
C  
D  
E  
F  
7 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)  
G, N  
H, O  
J, P  
K, Q  
L, Z  
M, AA  
5 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)  
R  
S  
T  
U  
V  
W  
X  
Y  
2 CONDUCTOR ELECTRICAL CABLE (NO. 14 AWG)  
BB  
CC  
DD  
EE  
VIDEO DETECTION CABLE  
MM  
1 CONDUCTOR (No. 6 AWG) STRANDED COPPER GROUND WIRE  
PF  
2 WIRES, ELECTRICAL CABLE 1-CONDUCTOR NO. 4 AWG THHN/THWN  
PC  
CABLE-3 WIRES 1 CONDUCTOR 250 KCMIL.CU. USE  
+ GROUND ROD

<b>SHA</b> STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION OFFICE OF TRAFFIC & SAFETY TRAFFIC ENGINEERING DESIGN DIVISION <b>MD 28 (EAST JEFFERSON STREET) &amp; MONROE STREET</b> ROCKVILLE, MARYLAND	
GENERAL INFORMATION PLAN	
SCALE <u>N.T.S.</u>	DATE <u>06/2010</u> CONTRACT NO. <u>XX4275185</u>
DESIGNED BY <u>S. SMITH</u>	COUNTY <u>MONTGOMERY COUNTY</u>
DRAWN BY <u>S. SMITH</u>	LOGMILE <u>15002822.28</u>
CHECKED BY <u>J. WEAVER</u>	T.I.M.S. NO. <u>J499</u>
F.A.P. NO. _____	TOD NO. _____
TS NO. 24 H	DRAWING 2 OF 3
SHEET NO. OF	